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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,696	12/16/2003	Michael Man-Hak Tso	12487/10	8984

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EXAMINER	
HAILE, AWET A	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,696	MAN-HAK TSO ET AL.	
	Examiner	Art Unit	
	Awet A. Haile	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-33* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The indicated allowability of claims **16 and 17** is withdrawn in view of the newly discovered reference.

Applicant's argument with respect to **claims 1-33** have been considered but are moot in view of the new ground(s) of rejection.

Claims 1-33 are still pending in this application.

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claims 2 and 23 recites the limitation "only in volatile memory". There is insufficient antecedent basis for this limitation in the specification.

Claims 3-6 and 24-29 are objected to as being dependent of objected **claims 2 and 23.**

Claim Rejection – 35 USC§ 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 2 and 23** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 2 and 23 the occurrence "storing the incoming data (message) only in volatile memory" volatile memory also stores non stateless routing data, it's unclear how the non stateless routed incoming data (message) stored.

Claims **3-6 and 24-29** are rejected as being dependent of the rejected **claims 2 and 23.**

Claim Rejection – 35 USC§ 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. **Claims 17,11,20,21 and 30** are rejected under 35 U.S.C. 102(a) as being anticipated by Robert Friend hereinafter referred to as (Robert) "Secure Flow Processing Enhances QoS in Routes" 06/11/2002.

Regarding claims 1 and 30, Robert teaches a method of processing incoming data, comprising: receiving incoming data (fig 2); and determining whether to employ stateless routing of the incoming data based on a destination host associated with the incoming data (fig 3, a stateless QoS class of service allow packets to the cloud based on the first four columns, which includes the destination IP and destination port, see also page 4, paragraph 1 and 2).

Regarding claim 7, Robert discloses storing historical data for the destination host; and determining whether to employ stateless routing based on the historical data (fig 3, shows data related to the destination host)

Regarding claim 11, Robert discloses, receiving control data; and determining whether to employ stateless routing based on the control data (see page 3, paragraph 5).

Regarding claim 20, Robert discloses, the incoming data is received over a first connection, the method further including sending the incoming data toward the destination host over a second connection, the first and second connections being part of a virtual circuit(see fig 1, see also page 3, paragraph 5)

Regarding claim 21, Robert discloses, the sending of the incoming data begins before completion of the receiving of the incoming data (page 3, paragraph 4, the word "Real-

Time" indicates sending incoming data before completion of receiving data).

Claim Rejection – 35 USC§ 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims **2, 12, 13, 22 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert in view of Gazsi et al (US 2001/0030961 A1).

Regarding claim 2, 12, 31, Robert discloses determining that stateless routing is to be employed (fig 3, a stateless QoS class of service allow packets to the cloud based on the first four columns, which includes the destination IP and destination port, see also page 4, paragraph 1 and 2) as recited in claim 2,

However, Robert fails to teach storing the incoming data only in volatile memory as recited in claim 2, wherein the incoming data is received in a data channel and the control data is received in a control channel as recited in claim 12.

Gazsi et al from the same field of endeavor teaches, storing the incoming data only in volatile memory(fig 4, memory 9, see also column 2, paragraph 38, lines 12 -15), , wherein the incoming data is received in a data channel and the control data is received in a control channel(fig 4 , paragraph 37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of storing the incoming data in volatile memory and receiving the incoming data and control data in a separate data channel and control channel as taught by Gazsi et al into the stateless router of Robert, the motivation for doing this is to reduce memory access time by separating and storing the received data in to control and data buffers.

Regarding claim 13, Robert teaches the incoming data and the control data are received in a data channel (see page 3, paragraph 5).

Regarding clam 22, Robert, teaches, wherein the incoming data includes a message (page 4, paragraph 4)

9. **Claims 3-6, 32 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert and Gazsi et al as applied to claim 2, above, and further in view of Sloo (WO 96/38987).

Regarding claims 3-6, 32 and 33 Robert and Gazsi et al disclose all the subject matter with the exception of, withholding confirmation of receipt of the incoming data until confirmation of delivery is received from either the destination host or a downstream router as recited in claims 3 and 32, wherein a copy of the incoming data is to be stored in nonvolatile memory by a sender of the incoming data until the confirmation of receipt is received at the sender as recited in claims 4 and 33.Receiving the confirmation of delivery; and sending the confirmation of receipt toward a sender of the incoming data as recited in claim 5. Aborting the stateless routing by storing the incoming data in nonvolatile memory (Hard disk) and sending confirmation of receipt of the incoming data toward a sender of the incoming data as recited in claim 6.

Sloo from the same filed of endeavor teaches withholding confirmation of receipt of the incoming data until confirmation of delivery is received from either the destination host or a downstream router (fig 2B, steps 200 - 216), wherein a copy of the incoming data is to be stored in nonvolatile memory by a sender of the incoming data until the

confirmation of receipt is received at the sender (fig 2B, also see page 10, lines 21 – 34). Receiving the confirmation of delivery; and sending the confirmation of receipt toward a sender of the incoming data (fig 2B, steps 206 – 216). Aborting the stateless routing by storing the incoming data in nonvolatile memory (Hard disk) and sending confirmation of receipt of the incoming data toward a sender of the incoming data (fig 2B, step 216).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of withholding confirmation until the recipient acknowledge, storing the incoming data in nonvolatile memory by a sender, receiving the conformation from the recipient and send it to the sender, terminate stateless routing by storing the incoming data in nonvolatile memory into the stateless router of Robert, the motivation to enhance quality of service by confirming data delivery from the sender to the receiver.

10. **Claims 8-10 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert in view of Hannel et al.

Regarding claim 8-10 and 18, Robert discloses all the subject matter with the exception of the historical data includes at least one of previous stateless routing outcomes and previous routing latencies as recited in claim 8. Calculating a success rate probability based on the previous routing outcomes as recited in claim 9.Calculating a weighted latency average based on the previous routing latencies as recited in claim 10. Generating

a probability decision representative of whether stateless routing is to be employed as recited in claim 18.

Hannel et al from the same field of endeavor discloses the historical data includes at least one of previous stateless routing outcomes and previous routing latencies (column 5, lines 26 – 41). Calculating a success rate probability based on the previous routing outcomes .Calculating a weighted latency average based on the previous routing latencies Generating a probability decision representative of whether stateless routing is to be employed (see column 7, lines 29-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of storing historical data and generating a probability decision representative of whether stateless routing is to be employed as taught by Hannel et al into the stateless router of Robert, the motivation for doing this is to increase the quality of service by knowing the destination hosts probability of receiving the forwarded message.

11. **Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert in view of Nielsen et al (US 2003/0074413 A1)

Regarding claims 14 and 15, Robert discloses all the subject matter with the exception of wherein the control data includes at least one of a time-to-live value, a hop count value and a maximum- hop value for the incoming data as recited in claim 14.At least one of the time-to-live value and the maximum-hop value if the incoming data is associated with a plurality of destination hosts as recited in claim 15.

Nielsen et al teaches wherein the control data includes at least one of a time-to-live value, a hop count value and a maximum- hop value for the incoming data (see paragraph 50, lines 8-14).At least one of the time-to-live value and the maximum-hop value if the incoming data is associated with a plurality of destination hosts (see paragraph 53, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of including a time-to-live value a hop count value and a maximum- hop value, at least one of the time-to-live value and the maximum-hop value if the incoming data is associated with a plurality of destination hosts into the control data as taught by Nielsen et al into stateless router of Robert the motivation for doing this is to increase the quality of service, by helping the stateless router to determine whether to use stateless routing or not.

12. **Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert in view of Saliga (US 3870828).

Regarding claim 16, Robert teaches making the decision of whether stateless routing is to be employed (fig 3, a stateless QoS class of service allow packets to the cloud based on the first four columns, which includes the destination IP and destination port, see also page 4, paragraph 1 and 2)as recited in claim 16.

However, Robert fail to teach either caching or generating a binary decision representative as recited in claim 16, generating a binary decision for each of the plurality of destination hosts; and performing an AND operation between each of the binary decisions as recited in claim 17.

Saliga from the same filed of endeavor teaches that, generating a binary decision representative (see column 3, lines 13-19), generating a binary decision for each of the plurality of destination hosts; and performing an AND operation between each of the binary decisions (fig 3. AND operator 116, binary decisions are made using and AND operator).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of generating a binary decision representative and generating a binary decision for each of the plurality of destination hosts and performing an AND operation between each of the binary decisions as taught

by Saliga into the stateless router of Robert, to improve quality of service of the stateless router.

Allowable Subject Matter

13. **Claims 19 and 23 -29** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bestavros et al (US 6370584 B1), Zhu et al (US 7260186 B2), O'Brien et al (US 6351776 B1) and Horviz et al (US 2003/0101190 A1) are recited to show stateless routing.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Awet Haile whose telephone number is (571) 270-3114. The examiner can normally be reached on Monday - Thursday 10:00 AM – 5:00 PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, Call 800 –786-9199(IN USA OR CANADA) or 571-272-1000.

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